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(12) # EUROPEAN PATENT SPECIFICATION

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(54) **Two piece dust control mat.**

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## Description

This invention relates generally to rubber-backed dust control floor mats of the type which have a pile surface on one side and a rubber or rubber-like material on the other side. Mats if this type are generally used in access ways where people tend to brush or scrape their feet in order to prevent carrying of moisture and/or dirt, accumulated on their footwear, into other areas of the premises. Normally these mats are located in areas of high pedestrian traffic, such as doorways.

The rubber-backed dust control mat, historically, has been an integrated structure in which the rubber-like backing has been laminated and/or molded to the undersurface of the pile fabric to provide a unitary structure. This provides a strong mat with a long service life but has the disadvantage that the weight and volume of the rubber backing material requires a large washing capacity and at the same time exposes the rubber material to high heat every time the mat is washed and dried. This high heat has a deleterious effect on the rubber-like material over a period of time, resulting in a shorter service life.

There is known from US-A-4 479 280 a two-piece dust control mat in which a rubber-like backing material and a pile fabric are detachably secured together by hook-and-loop fasteners. This has the advantage that the pile fabric can be removed from the backing for laundering. However, the use of hook-and-loop fasteners has certain disadvantages. There is a degree of difficulty in removing the pile fabric from the backing and in replacing it accurately in position. Also, the nature of the fastener material is such as to attract dirt and other materials which in time decreases the effectiveness of the fastener.

The present invention accordingly relates to a dust control mat comprising a base mat formed of a rubber-like material and a launderable pile fabric mat on top of and engaging the base mat, and is characterised in that the upper surface of the base mat and the under surface of the pile fabric mat are each provided with cleats which provide a non-sliding engagement between said pile fabric mat and said base mat.

The invention also provides a method of providing clean dust control mats comprising the steps of: laying down a base mat formed of a rubber-like material and having cleats on the upper surface, providing a launderable pile fabric mat with cleats on the bottom thereof, placing the pile fabric mat into engagement with the base mat by interlocking the cleats of the pile fabric mat and the base mat, and removing the pile fabric mat from the base mat when it becomes soiled and replacing it with another pile fabric mat having cleats on the bottom surface which interlock with the cleats on the upper surface of the base mat.

An embodiment of the invention will now be described with reference to the drawings, in which:

Figure 1 shows an interconnected two piece dust control mat;

Figure 2 is a section of the rubber-like backing strip used in Figure 1; and

Figure 3 is a sectional view taken on line 3-3 of Figure 1.

Looking now to the drawings and especially Figure 1 there is shown a dust control mat 10 consisting basically of a pile fabric 12 and a rubber-like base mat 14 on which the pile fabric 12 is placed. To prevent slippage between the pile fabric 12 and the base mat 14 the upper surface of the base mat 14 and the lower surface of the pile fabric 12 is treated to increase the friction resistance therebetween.

In the preferred form of the invention the pile fabric 12 consists of pile yarns 16 of cotton, nylon, etc. tufted through a woven or nonwoven substrate 18 of suitable material. To provide a friction resistant bottom a thin rubber-like material 20 is molded or otherwise secured to the bottom of the pile fabric 12 and has a plurality of cleats 22 formed therein in any suitable design to interlock with the cleats 24 on the upper surface of the rubber-like base mat 14. This material is about 50% less than that in the backing of a unitary mat.

The base mat 14 of rubber or other suitable material has cleats 24 on the upper surface thereof for reasons previously set forth. The base mat 14 also has cleats 28 on the bottom thereof in any suitable pattern which, like cleats 22, act as friction resistant elements to resist creeping to minimize movement of the carpets on the surface on which it is placed.

Currently, as mentioned above, the dust control mat 10 is made as a unit and is as such provided to rental laundries. The rental laundries rent the mats 10 to a user of a period basis of a week, month, etc. Then the rental laundry picks up the mat, replaces it with a clean mat and takes the soiled mat back for cleaning. Since the rubber-like backing material is fairly thick and heavy only a preselected number of mats can be washed and dried at one time. This process is slow due to the small number of mats that can be processed at one time and has a harsh, deleterious effect on the rubber-like material due to repeated washing and drying of same.

The herein-described dust control mat 10 eliminates several of these disadvantages. The rental laundry now can place base mat 14 in situ at its customer's location and merely remove and replace the pile fabric 12. The cleats 22 on the bottom of pile fabric 12 allow it to be placed in a

fixed position of the rubber-like base mat 14 by interengagement with the cleats 24 on the upper surface thereof. Thus, when the pile fabric 12 becomes soiled it can be removed from the base mat 14 and replaced by a clean pile fabric. Then, it is obvious that it is easier to wash and dry only the pile fabric 12 than the unitary dust control mat. Furthermore, the consumption of energy is less since there is less material to wash and dry. During the removal, replacement and washing of the pile fabric the base rubber-like material remains in situ at the customer's location with its lower cleats engaging the surface on which it has been placed.

It can readily be seen that a dust control mat has been described which provides the efficiency of that which is currently being used but allows savings in replacement time, washing, reduction in energy cost and increases the service life of the rubber component of the mat resulting in reduced capital investment.

## Claims

1. The method of providing clean dust control mats (10) comprising the steps of: laying down a base mat (14) formed of a rubber-like material and having cleats (24) on the upper surface, providing a launderable pile fabric (12) with cleats (22) on the bottom thereof, placing the pile fabric (12) into engagement with the base mat (14) by interlocking the cleats (22, 24) of the pile fabric (12) and the base mat (14), and removing the pile fabric (12) from the base mat (14) when it becomes soiled and replacing it with another pile fabric (12) having cleats (22) on the bottom surface which interlock with the cleats (24) on the upper surface of the base mat (14).

2. A dust control mat (10) comprising a base mat (14) formed of a rubber-like material and a launderable pile fabric (12) on top of and engaging the base mat (14), characterised in that the upper surface of the base mat (14) and the under surface of the pile fabric (12) are each provided with cleats (22, 24) which provide a non-sliding engagement between said pile fabric (12) and said base mat (14).

3. A dust control mat (10) as claimed in Claim 2, wherein said, pile fabric (12) is mounted centrally of said base mat (14) and is of such a size that it does not extend outwardly to the edges of said base mat (14).

4. A dust control mat (10) as claimed in Claim 2 or Claim 3, wherein said pile fabric (12) includes a substrate with yarns (16) tufted therein and extending upwardly away from the under surface thereof.

5. A dust control mat (10) as claimed in any one of Claims 2 to 4, wherein the cleated surface of said pile fabric (12) is a thin layer of rubber-like material molded thereon.

6. A dust control mat (10) as claimed in Claim 5 wherein cleats (28) are formed on the under surface of said base mat (14) to aid in the prevention of slippage of said dust control mat (10) to provide skid resistance thereto.

## Patentansprüche

1. Verfahren zum Bereitstellen sauberer Fußmatten (10), das die Schritte umfaßt, eine aus gummiartigem Material gebildete Unterlegmatte (14), die an der oberen Oberfläche Stollen (24) hat, hinzulegen, ein waschbares Florgewebe (12) mit Stollen (22) an dessen Unterseite bereitzustellen, das Florgewebe (12) in Eingriff mit der Unterlegmatte (14) zu bringen, indem man bewirkt, daß die Stollen (22, 24) des Florgewebes (12) und der Unterlegmatte (14) ineinander greifen, und das Florgewebe (12) von der Unterlegmatte (14) zu entfernen, wenn es schmutzig wird, und es durch ein anderes Florgewebe (12) zu ersetzen, das an der unteren Oberfläche Stollen (22) hat, die in die Stollen (24) an der oberen Oberfläche der Unterlegmatte (14) greifen.

2. Fußmatte (10), die eine aus gummiartigem Material gebildete Unterlegmatte (14) und ein darauf befindliches und in die Unterlegmatte (14) eingreifendes waschbares Florgewebe (12) umfaßt, dadurch **gekennzeichnet**, daß die obere Oberfläche der Unterlegmatte (14) und die untere Oberfläche des Florgewebes (12) je mit Stollen (22, 24) versehen sind, die für einen nichtgleitenden Eingriff zwischen dem Florgewebe (12) und der Unterlegmatte (14) sorgen.

3. Fußmatte (10) nach Anspruch 2, bei der das Florgewebe (12) auf der Unterlegmatte (14) mittig angebracht ist und eine solche Größe hat, daß es sich nicht nach außen bis zu den Rändern der Unterlegmatte (14) erstreckt.

4. Fußmatte (10) nach Ansprüchen 2 oder 3, bei der das Florgewebe (12) ein Trägergewebe mit Fäden (16) umfaßt, die darin eingetuftet sind und sich von dessen unterer Oberfläche weg nach oben erstrecken.

5. Fußmatte (10) nach einem der Ansprüche 2 bis 4, bei der die mit Stollen besetzte Oberfläche des Florgewebes (12) eine dünne Schicht von angegossenem gummiartigen Material ist.

6. Fußmatte (10) nach Anspruch 5, bei der Stollen (28) an der unteren Oberfläche der Unterlegmatte (14) gebildet sind, um zu helfen, daß ein Rutschen der Fußmatte (10) vermieden wird, so daß sie rutschfest ist.

**Revendications**

1. Procédé de réalisation de paillassons (10) propres consistant à : poser un tapis de base (14) en un matériau de type caoutchouc présentant des barrettes (24) sur sa surface supérieure, à prévoir un tissu à poils (12) susceptible de passer au blanchissage et présentant des barrettes (22) sur sa surface inférieure, à placer le tissu à poils (12) de façon à l'emboîter avec le tapis de base (14) par interpénétration des barrettes (22, 24) du tissu à poils (12) et du tapis de base (14), et à retirer le tissu à poils (12) du tapis de base (14) lorsqu'il est sali et à le remplacer par un autre tissu à poils (12) présentant des barrettes (22) sur sa surface inférieure, lesquelles s'emboîtent par interpénétration avec les barrettes (24) de la surface supérieure du tapis de base (14).

2. Paillasson (10) comprenant un tapis de base (14) en un matériau de type caoutchouc et un tissu à poils (12), susceptible de passer au blanchissage, au-dessus du tapis de base (14) et s'emboîtant avec ce dernier, caractérisé en ce que la surface supérieure du tapis de base (14) et la surface inférieure du tissu à poils (12) sont toutes deux dotées de barrettes (22, 24) qui assurent un emboîtement inamovible entre ledit tissu de à poils (12) et ledit tapis de base (14).

3. Paillasson (10) selon la revendication 2, dans lequel ledit tissu à poils (12) est monté au centre dudit tapis de base (14) et a des dimensions telles qu'il ne s'étend pas vers l'extérieur jusqu'aux bords dudit tapis de base (14).

4. Paillasson (10) selon la revendication 2 ou 3, dans lequel ledit tissu à poils (12) comprend un support comportant des fils (16) tuftés s'étendant verticalement à partir de sa surface inférieure.

5. Paillasson (10) selon l'une quelconque des revendications 2 à 4, dans lequel la surface à barrettes dudit tissu à poils (12) est une couche mince de matériau de type caoutchouc moulée sur ce dernier.

6. Paillasson (10) selon la revendication 5, dans lequel des barrettes (28) sont formées sur la surface inférieure dudit tapis de base (14) pour contribuer à empêcher le glissement dudit paillasson (10), pour lui conférer une certaine résistance au dérapage.

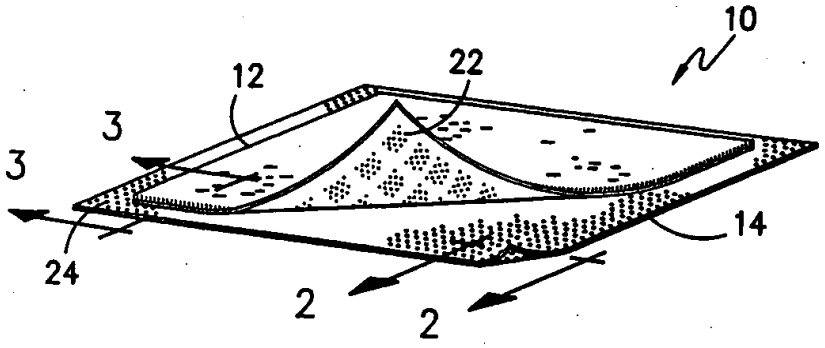


FIG. — 1 —

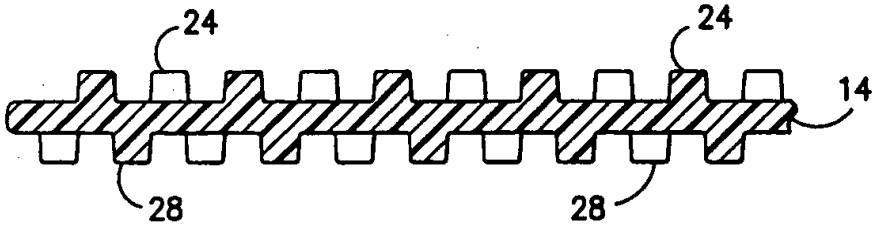


FIG. — 2 —

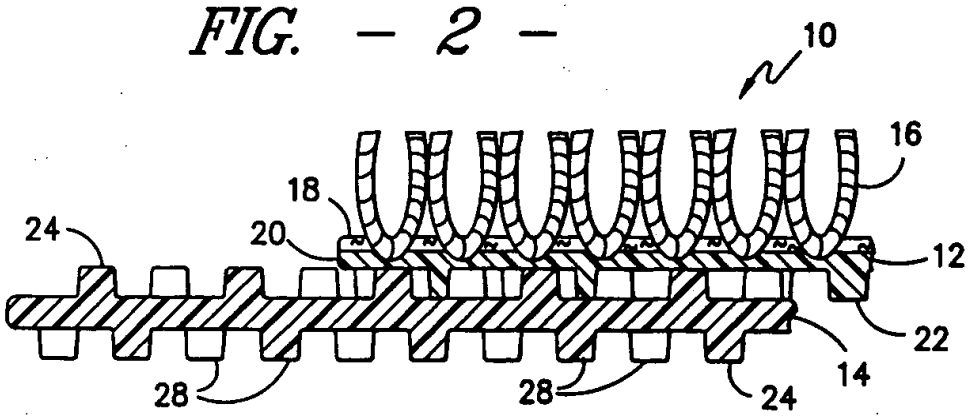


FIG. — 3 —